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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,631	06/16/2005	Benoit Miscopein	0512-1282	2873
466 7590 07/17/2007 YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202			EXAMINER HANNON, CHRISTIAN A	
			ART UNIT 2618	PAPER NUMBER
			MAIL DATE 07/17/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/539,631	Applicant(s) MISCOPEIN ET AL.	
	Examiner Christian A. Hannon	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 13-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-27, 31 and 32 is/are allowed.
- 6) ☒ Claim(s) 13 is/are rejected.
- 7) ☒ Claim(s) 14-20 and 28-30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                    |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                               | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/16/2005</u> . | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Information Disclosure Statement*

2. The information disclosure statement (IDS) submitted on 6/16/2005 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statement.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim <sup>12</sup>~~1~~ is rejected under 35 U.S.C. 103(a) as being unpatentable over Mo et al (US 2004/0105515), hereinafter Mo.

Regarding claim <sup>12</sup>~~1~~, Mo teaches a method for receiving an ultra-wideband signal representative of symbols, this signal which is transmitted over a transmission channel comprising, over a symbol time, a series of modulated successive direct pulses, each pulse being propagated along at least one direct propagation path, with which series a plurality of separate successive secondary pulses are associated which are each propagated along a secondary propagation path, characterized in that, with the series of modulated successive direct pulses and the plurality of secondary pulses associated

with each of the modulated successive direct pulses being received on the same receiving circuit (Page 1, [0003]), the method consists in producing a composite correlation pattern which is constituted by a series of elemental correlation patterns (Page 4, [0058], equation 27), calculating the value of the global inter-correlation coefficient between each direct pulse associated with the plurality of secondary pulses and the composite correlation pattern, which allows a global correlation value to be obtained for the symbol (Page 4, [0069], equation 34 & 35). By using the series shown in equation 37, the examiner has interpreted the series of the claim as the series shown in the function. Further as each correlation window is realigned with a different series the examiner has interpreted equations 34 & 35 as showing the "global inter-correlation coefficient" associated with UWB pulses.

***Allowable Subject Matter***

5. Claims 21-27, 31 & 32 are allowed.

Regarding claim 21, Mo teaches a system for receiving a UWB signal representative of symbols, this signal which is transmitted over a transmission channel comprising, over a symbol time, a series of modulated successive direct pulses, each modulated pulse being propagated along at least one direct propagation path, with which series a plurality of separate successive secondary pulses are associated which are each propagated along a secondary propagation path (Page 1, [0003]). However Mo fails to teach that the system is characterized in that it comprises at least common means for receiving the series of modulated successive pulses and that the plurality of secondary pulses associated with each of the modulated successive direct pulses, and,

connected to the common receiving means and a means for acquiring and updating, over at least one symbol time, an image of the transmission channel, in terms of direct pulse or secondary pulses, of the propagation time and the difference in propagation time between the direct pulse and successive secondary pulses, the acquisition and updating means allowing, by means of sliding correlation, the appearance and the disappearance of secondary propagation paths and/or the principal propagation path to be updated and over at least one symbol time, a composite correlation pattern to be established which is constituted by a series of successive elemental correlation patterns which are each associated with a direct pulse and a plurality of successive secondary pulses, the acquisition and updating means allowing a path list signal to be transmitted representing the image of the transmission channel, a single correlation means which receives the path list signal for direct and secondary propagation paths and which allows the value to be calculated for the global inter-correlation coefficient between each direct pulse which is associated with the plurality of secondary pulses and the composite correlation pattern which allows a global correlation value to be obtained for the symbol.

Claims 23-27 & 31 & 32 are allowed as they depend from claim 21.

6. Claims 14-20 & 28-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 14, Mo teaches the method according to claim 13, however Mo fails to teach that the series of elemental correlation patterns comprises a first elemental

correlation pattern which is associated with each direct pulse and successive elemental correlation patterns which are each associated with a successive secondary pulse.

Regarding claim 16, Mo teaches the method of claim 13, however Mo fails to teach that the step which consists in calculating the value of the global inter-correlation coefficient comprises, calculation of the elemental inter-correlation coefficient between each elemental inter-correlation pattern and the direct pulse associated with the plurality of secondary pulses, integration over the symbol time of the group of elemental inter-correlation coefficient values in order to transmit the global inter-correlation coefficient values which represents global correlation value of the symbol .

Regarding claim 17, Mo teaches the method of claim 13, however Mo fails to teach that for a countable group of pulses, direct pulse and secondary pulses, which are propagated over a direct path or secondary path of a plurality of secondary propagation paths, the method consists in retaining the first N paths, the first N paths comprising the direct path which corresponds to the shortest propagation time for the associated modulated pulse, and N-1 secondary paths which each correspond to a propagation time for a secondary pulse which is successively increasing.

Regarding claim 18, Mo teaches the method of claim 13, however Mo fails to teach that for a countable group of pulses, direct pulse and secondary pulses, which are propagated over a direct path or secondary path of a plurality of secondary propagation paths, the method consists in retaining N paths for which the amplitude of the direct pulse and secondary pulses is at a maximum.

Regarding claim 20, Mo teaches the method of claim 13, however Mo fails to teach that the step which consists in producing a composite correlation pattern consists in establishing, by means of correlation over at least one symbol time, an image of the transmission channel in terms of direct pulse or secondary pulses, of the propagation time and the difference in propagation time between the direct pulse and successive secondary pulses, updating by means of sliding correlation, the image of the transmission channel in order to update the appearance and disappearance of secondary propagation paths and/or the direct propagation path, and to establish, over at least one symbol time, the composite correlation pattern as an updated image of the transmission channel.

Claims 15, 19 & 28-30, are objected to as they depend from objected independent claims.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Miller (US 6, 967,993) discloses UWB bandwidth system and method for fast synch using sub-code spins.

Hector et al (US 6,810,087) disclose UWB communications system.

De Rivaz et al (US 2005/0041725) disclose a receiver of a UWB signal and associated reception method.

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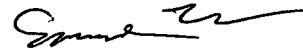
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian A. Hannon whose telephone number is (571) 272-7385. The examiner can normally be reached on Mon. - Fri. 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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July 5 2007



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